

36. A method according to claim 35, wherein the pulse laser comprises an excimer laser.

37. A method according to claim 36, wherein the excimer laser includes means for narrowing a bandwidth of the light and for changing the wavelength of the light.

38. A method of manufacturing a projection exposure apparatus having a KrF excimer laser, said method comprising the steps of:

measuring an optical performance of a projection optical system, by producing an interference fringe which bears information related to aberration of the projection optical system, by use of a harmonic of an Argon laser, and then by analyzing the interference fringe, wherein a wavelength of the harmonic of the Argon laser corresponds to a design wavelength of the projection optical system and also corresponds to a wavelength of light from the KrF excimer laser.

39. A projection exposure apparatus manufactured in accordance with a method as recited in claim 38, wherein the apparatus includes a KrF excimer laser and a projection optical system for projecting a pattern onto a wafer with light from the KrF excimer laser.